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Amdt. Dated: July 2, 2004

Attorney Docket: DYM00-007/YMEDIA007A
Reply to Office action of May 10, 2004

REMARKS/ARGUMENTS

Examiner Hannett is thanked for the thorough examination of the subject Patent Application. The Claims have been carefully reviewed and amended, and are considered to be in condition for allowance.

5   Reconsideration of the rejection under 35 USC §102(b) of Claims 12, 14, 15, 19, 21, and 25 as being anticipated by U.S. Patent 5,805,216 (Tabei, et al.) is requested in light of the following arguments.

Tabei, et al. does discuss detection and correction methods in which levels of image signals produced from a plurality of pixels in the vicinity of a

10   defective pixel are compared with one another to select image information for the pixel used for interpolation on the basis of the comparison result so that image information at the position of the defective pixel is interpolated. Tabei, et al. does not provide:

With regards to Claims 12, 14, and 15,

15   selecting a first pixel element for determination that said pixel
               element is defective,
            identifying an associated set of pixel elements of said array of pixel
               elements in which said first pixel element is member,
            partitioning said associated set of pixel elements of said array into a
20   plurality of subsets of the associated set such that said first pixel
               element is centrally included,

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determining an arithmetic central value for each of the plurality of

subsets of the associated set;

comparing a value of said first pixel element with a second value related to

said arithmetic central value for each of the plurality of subsets of the

5   associated set;

determining from the comparison if the value of the first pixel element is in

error; and

substituting a third value related to the value of at least one of the other

pixels elements at least partly in response to determining the value of

10   the first pixel element is error. (Claim 12, Lines 6-23).

With regards to Claims 19, 21, and 25,

a defective pixel detection circuit configured to

to select a first pixel element for determination that said pixel

element is defective,

15   to identify an associated set of pixel elements of said array of pixel

elements in which said first pixel element is member,

to partition said associated set of pixel elements of said array into a

plurality of subsets of the associated set such that said first pixel

element is centrally.included,

20   to determine an arithmetic central value for each of the plurality of

subsets of the associated set,

to compare a value of said first pixel element with a second value

related to said arithmetic central value for each of the plurality of

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subsets of the associated set at least element values of other

imaging pixel elements in a first group, and

to determine from the comparison if the value of the first pixel

element is in error; and

5   a pixel compensation circuit configured to replace the value of the first

pixel with a third value related to at least one other pixel within the

group of pixels when the first pixel value varies by more than the first

amount from the second value. (Claim 19, Lines 5-27)

Tabei, et al. does not provide for selecting a set of associated pixel

10   elements, dividing the set of picture elements into subsets that are used to

determine an arithmetic central value (mean, average, median) that is used to

calculate a comparison value (the second value) that is used to determine

whether the selected pixel element is defective. The defective pixel element's

being replaced with a value derived from the arithmetic central value.

15   Reconsideration of the rejection under 35 USC §102(e) of Claims 26, and

30-34 as being anticipated by U.S. Patent 6,724,945 (Yen, et al.) is requested in

light of the following arguments.

Yen, et al. describes a method for correcting a defective pixel based upon

curvature information computed from pixel values located near the defective

20   pixel. Alternately, a median pixel value is determined from values of pixels

located near a defective pixel, and the defective pixel is corrected based upon

the median pixel value. Yen, et al. does not provide:

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With regards to Claims 26 and 30,

a defective pixel detection circuit configured:

to select a first pixel element for determination that said pixel element is defective,

5   to identify an associated set of pixel elements of said array of pixel elements in which said first pixel element is member,

to partition said associated set of pixel elements of said array into a plurality of subsets of the associated set such that said first pixel element is centrally included,

10   to determine an arithmetic central value for each of the plurality of subsets of the associated set,

to compare a value of said first pixel element with a second value related to said arithmetic central value for each of the plurality of subsets of the associated set at least element values of other

15   imaging pixel elements in a first group, and

to determine from the comparison if the value of the first pixel element is in error. (Claim 26, Lines 6-23)

With regards to Claims 31-33

for the captured image, comparing a value of a first pixel element with a

20   second value related to an arithmetic central value determined from element values of pixel elements in a two dimensional neighborhood associated with said first pixel element. (Claim 31-33

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With regards to Claim 34

a defective pixel detection circuit configured to determine when a value of

a first pixel associated with a first pixel sensor element within a two

dimensional neighborhood associated with said first pixel is in error by

5   comparing the value of the first pixel to a second value related to an

arithmetic central value determined from at least one other pixel

element within the two dimensional neighborhood. (Claim 34, Lines 5-

11)

Yen, et al. does not provide for selecting a set of associated pixel

10   elements, dividing the set of picture elements into subsets that are used to

determine an arithmetic central value (mean, average, median) that is used to

calculate a comparison value (the second value) that is used to determine

whether the selected pixel element is defective. The defective pixel element's

being replaced with a value derived from the arithmetic central value.

15   Reconsideration of the rejection under 35 USC §103(a) of Claims 18 and

24 as being unpatentable over U.S. Patent 5,805,216 (Tabei, et al.) is requested

in light of the following arguments.

Tabei, et al. does discuss CCD imagers and does not discuss whether the

imagers are monochrome or colored and further, does not discuss at CMOS

20   imagers. It is acknowledged that the Examiner has taken notice that it is known

in the art that the imagers may be monochrome and it would be obvious to use

CMOS imagers. However, as described above for claims 12 and 19, Tabei, et al.

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does not provide for selecting a set of associated pixel elements, dividing the set

of picture elements into subsets that are used to determine an arithmetic central

value (mean, average, median) that is used to calculate a comparison value (the

second value) that is used to determine whether the selected pixel element is

5   defective. The defective pixel element's being replaced with a value derived from

the arithmetic central value.

Reconsideration of the rejection under 35 USC §103(a) of Claims 27-29

as being unpatentable over U.S. Patent 6,724,945 (Yen, et al.) is requested in

light of the following arguments.

10   Yen, et al. does discuss digital imaging device and it is acknowledged that

the Examiner has taken official notice that it was well known in the art at the time

the invention was made to enable digital imaging devices to take video images to

enable a user to capture motion video, to take video images to enable a user to

capture full motion video in an NTSC format, and to place digital camera on cell-

15   phones to enable users to take pictures with their phones. However, Yen, et al.,

as described above for Claim 26, does not provide for selecting a set of

associated pixel elements, dividing the set of picture elements into subsets that

are used to determine an arithmetic central value (mean, average, median) that

is used to calculate a comparison value (the second value) that is used to

20   determine whether the selected pixel element is defective. The defective pixel

element's being replaced with a value derived from the arithmetic central value.

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Reconsideration of the rejection under 35 USC §103(a) of Claims 13, 16, 17, 20, 22, and 23 as being unpatentable over in U. S. Patent 5,805,216 (Tabei, et al.) in view of U. S. Patent 6,724,945 (Yen, et al.) is requested in light of the following arguments.

5   Tabei, et al. does discuss detection and correction methods in which levels of image signals produced from a plurality of pixels in the vicinity of a defective pixel are compared with one another to select image information for the pixel used for interpolation on the basis of the comparison result so that image information at the position of the defective pixel is interpolated. Yen, et al.

10   describes a method for correcting a defective pixel based upon curvature information computed from pixel values located near the defect pixel. Alternately, a median pixel value is determined from values of pixels located near a defect pixel, and the defect pixel is corrected based upon the median pixel value. Tabei et al. in combination with Yen, et al. does not provide:

15   With regards to Claims 13, 16, and 17,

selecting a first pixel element for determination that said pixel element is defective,

identifying an associated set of pixel elements of said array of pixel elements in which said first pixel element is member,

20   partitioning said associated set of pixel elements of said array into a plurality of subsets of the associated set such that said first pixel element is centrally included,

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determining an arithmetic central value for each of the plurality of

subsets of the associated set;

comparing a value of said first pixel element with a second value related to

said arithmetic central value for each of the plurality of subsets of the

associated set;

determining from the comparison if the value of the first pixel element is in

error; and

substituting a third value related to the value of at least one of the other

pixels elements at least partly in response to determining the value of

the first pixel element is error. (Claim 12, Lines 6-23).

With regards to Claims 20, 22, and 23,

a defective pixel detection circuit configured to

to select a first pixel element for determination that said pixel

element is defective,

to identify an associated set of pixel elements of said array of pixel

elements in which said first pixel element is member,

to partition said associated set of pixel elements of said array into a

plurality of subsets of the associated set such that said first pixel

element is centrally included,

to determine an arithmetic central value for each of the plurality of

subsets of the associated set,

to compare a value of said first pixel element with a second value

related to said arithmetic central value for each of the plurality of

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subsets of the associated set at least element values of other

imaging pixel elements in a first group, and

to determine from the comparison if the value of the first pixel

element is in error; and

5   a pixel compensation circuit configured to replace the value of the first

pixel with a third value related to at least one other pixel within the

group of pixels when the first pixel value varies by more than the first

amount from the second value. (Claim 19, Lines 5-27)

Tabei et al. in combination with Yen, et al. do not provide for selecting a

10   set of associated pixel elements, dividing the set of picture elements into subsets

that are used to determine an arithmetic central value (mean, average, median)

that is used to calculate a comparison value (the second value) that is used to

determine whether the selected pixel element is defective. The defective pixel

element's being replaced with a value derived from the arithmetic central value.

15   The invention as claimed in amended Claims 13, 16, 17, 20, 22, and 23 is

believed to be novel and patentable over the combination of Tabei et al. in view

of Yen, et al. because there is an insufficient basis, as described above, to

conclude that the combination of claimed elements would have been obvious to

one skilled in the art. That is to say, there must be something in the prior art or

20   line of reasoning to suggest that the combination of these various references is

desirable. The applicant believes that there is no such basis for the combination.

The applicant therefore requests that Examiner Rhode reconsider the rejection in

view of these arguments.

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Claims 35-39 are added to define the arithmetic central value as the median, average, or mean of the subsets of pixels

The related art references made of record and not relied upon have been reviewed and it is agreed that they do not suggest the present detailed claimed

5   invention.

The applicant acknowledges that Claims 1-11 are allowed and respectfully requests that a timely Notice of Allowance for all claims be issued in this case.

It is requested that should Examiner Hannett not find that the Claims are now allowable, that the undersigned be called at (845) 452-5863 to overcome

10   any problems preventing allowance.

Respectfully Submitted,
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